Curriculum Vitae

RICHARD SIEGMUND LINDZEN

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Date of Birth: 8 February 1940
Place of Birth: Webster, Massachusetts
Grew up in the Bronx
Married with two sons; wife's name is Nadine

EDUCATION:
Bronx High School of Science, 1956
Attended Rensselaer Polytechnic Institute (1956-58)
A.B.(*mcl*) in Physics, 1960, Harvard University.
S.M. in Applied Mathematics, 1961, Harvard University.
Ph.D. in Applied Mathematics, 1964, Harvard University. Thesis title: *Radiative and photochemical processes in strato- and mesospheric dynamics.*

WORK EXPERIENCE:

Summers 1956-59	Technician Radio Corporation of America
1964-1965.	Research Associate in Meteorology, University of Washington.
1965-1966.	NATO Post-Doctoral Fellow at the Institute for Theoretical Meteorology, University of Oslo.
1966-1967.	Research Scientist, National Center for Atmospheric Research.
April-June 1967.	Visiting Lecturer in Meteorology, UCLA.
1968-1972.	Associate Professor and Professor of Meteorology, University of Chicago.
Summers 1968, 1972, 1978.	Summer Lecturer, NCAR Colloquium.
October-December 1969.	Visiting Professor, Department of Environmental Sciences, Tel Aviv University.
1972-1982.	Gordon McKay Professor of Dynamic Meteorology, Harvard University.

February-June 1975.	Visiting Professor of Dynamic Meteorology, Massachusetts Institute of Technology.
January-June 1979.	Lady Davis Visiting Professor, Department of Meteorology, The Hebrew University, Jerusalem, Israel.
September 1980-June 1983.	Director, Center for Earth and Planetary Physics, Harvard University.
July 1982-June 1983.	Robert P. Burden Professor of Dynamical Meteorology, Harvard University.
July 1983- .	Alfred P. Sloan Professor of Meteorology, Massachusetts Institute of Technology. (Emeritus status as of 30 June 2013)
June 1988-2009 .	Distinguished Visiting Scientist at Jet Propulsion Laboratory.
September 1996-	Visiting professor, Laboratory for Dynamic Meteorology, Paris
November 2013-	Distinguished Senior Fellow, Cato Institute
July 2013	Retired and assumed Emeritus status

HONORS:

Phi Beta Kappa
Sigma Xi
NCAR Outstanding Publication Award, 1967
AMS Meisinger Award, 1968
AGU Macelwane Award, 1969
Alfred P. Sloan Fellowship, 1970-1976
Vikram Amblal Sarabhai Professor at Physical Research Laboratory, Ahmedabad, India, 1985
AMS Charney Award, 1985
Japanese Society for the Promotion of Science Fellowship, Dec. 1986-Jan. 1987
Member, National Academy of Sciences
Fellow, American Academy of Arts & Sciences
Fellow, American Meteorological Society
Fellow, American Geophysical Union
Fellow, American Association for the Advancement of Science
Sackler Visiting Professor, Tel Aviv University, January 1992
Landsdowne Lecturer, University of Victoria, March 1993
Member, Norwegian Academy of Science and Letters
Bernhard Haurwitz Memorial Lecturer, American Meteorological Society, 1997
Leo Prize of the Wallin Foundation (first recipient), 2006
Distinguished Engineering Achievement Award of the Engineers' Council, February 2009
Petr Beckmann Award of Doctors for Disaster Preparedness, 2012
Member, European Academy of Sciences and Arts.

MEMBERSHIP:

American Meteorological Society
National Academy of Sciences
American Academy of Arts and Science
American Association for the Advancement of Science
American Geophysical Union
European Geophysical Society
World Institute of Sciences
Norwegian Academy of Science and Letters
European Academy of Sciences and Arts

OTHER:

Corresponding Member, Committee on Human Rights, National Academy of Sciences
Lead author of the 2001 Report of the Intergovernmental Panel on Climate Change
Member, Climate Change Science Program Product Development Advisory Committee of the Department of Energy (term ended in 2009)

Previous service includes serving on editorial board of *Dynamics of Atmospheres and Oceans* and **PAGEOPH**, membership on the Rocket Research Committee, the US GARP (Global Atmospheric Research Program) Committee, the Assembly of Mathematical and Physical Sciences, the executive committee of the Space Studies Board, and the executive committee of the Board on Atmospheric Sciences and Climate of the National Research Council, serving as a member of the Woods Hole Oceanographic Institution Corporation and serving on the council of the American Meteorological Society, Atmospheric Dynamics Committee of the AMS, MIT representative to UCAR, Distinguished Visiting Scientist at the Jet Propulsion Laboratory and consultant to the Goddard Space Flight Center..

CURRENT RESEARCH INTERESTS:

The general circulation of the earth's atmosphere.
Climate dynamics.
Hydrodynamic shear instability.
Dynamics of the middle atmosphere.
Dynamics of planetary atmospheres.
Parameterization of cumulus convection.
Tropical meteorology.
Climate sensitivity.
Role of cirrus in climate.

MIT ACTIVITIES

Faculty Advisor, MIT Radio Society

Member, Board of MIT Hillel Foundation

Ph. D. THESIS STUDENTS

Donna Blake, Siu-Shung Hong, John Boyd, Lloyd Shapiro, Edwin Schneider, Margaret Niehaus, Jeffrey Forbes, Duane Stevens, Ian Watterson, Arthur Hou, Brian Farrell, Petros Ioannou, Arthur Rosenthal, Ka-Kit Tung, David Jacqmin, Ronald Miller, Arlindo DaSilva, Christopher Snyder, De-Zheng Sun, Daniel Kirk-Davidoff, Constantine Giannitsis, Gerard Roe, Nili Harnik, Pablo Zurita-Gotor, Roberto Rondanelli

M.S. THESIS STUDENTS

Joseph Chang, Niu Yang, Wen-Wei Pan

POST-DOCTORAL FELLOWS

Stephen Fels, Edward Sarachik, Ching-Yen Tsay, Isaac Held, Pinhas Alpert, M. Uryu, Steven Ashe, T. Aso, Randall Dole, Edwin Schneider, David Neelin, John Barker, Y.-Y. Hayashi, Michael Fox-Rabinowitz, Yuri Chernyak, Hans Schneider, Sumant Nigam, Edmund Chang, Myles Allen, Zachary Guralnik, Yong-Sang Choi, Heeje Ho.

PUBLICATIONS (excluding numerous op-eds)

1. (1965) On the asymmetric diurnal tide. *Pure & Appl. Geophys.*, **62**, 142-147.

2. R.S. Lindzen and R.M. Goody (1965). Radiative and photochemical processes in mesospheric dynamics: Part I. Models for radiative and photochemical processes. *J. Atmos. Sci.*, **22**, 341-348.

3. (1965) The radiative-photochemical response of the mesosphere to fluctuations in radiation. *J. Atmos. Sci.*, **22**, 469-478.

4. (1966) Radiative and photochemical processes in mesospheric dynamics: Part II. Vertical propagation of long period disturbances at the equator. *J. Atmos. Sci.*, **23**, 334-343.

5. (1966) Radiative and photochemical processes in mesospheric dynamics. Part III. Stability of a zonal vortex at midlatitudes to axially symmetric disturbances. *J. Atmos. Sci.*, **23**, 344-349.

6. (1966) Radiative and photochemical processes in mesospheric dynamics. Part IV. Stability of a zonal vortex at midlatitudes to baroclinic waves. *J. Atmos. Sci.*, **23**, 350-359.

7. (1966) On the theory of the diurnal tide. *Mon. Wea. Rev.*, **94**, 295-301.

8. (1966) Crude estimate for the zonal velocity associated with the diurnal temperature oscillation in the thermosphere. *J. Geophys. Res.*, **71**, 865-870.

9. (1966) On the relation of wave behavior to source strength and distribution in a propagating medium. *J. Atmos. Sci.*, **23**, 630-632.

10. (1966) Turbulent convection -- Malkus theory. *Proc. NCAR Thermal Convection Colloquium.* **NCAR Tech. Note 24**.

11. (1967) Thermally driven diurnal tide in the atmosphere. *Q.J. Roy. Met. Soc.*, **93**, 18-42.

12. (1967) Diurnal velocity oscillation in the thermosphere -- reconsidered. *J. Geophys. Res.*, **72**, 1591-1598.

13. (1967) On the consistency of thermistor measurements of upper air temperatures. *J. Atmos. Sci.*, **24**, 317-318.

14. (1967) Mesosphere. In *The Encyclopedia of Atmospheric Sciences and Astrogeology*, R. Fairbridge, ed. Reinhold Pub. Co., New York, pp 556-559.

15. R.S. Lindzen and D.J. McKenzie (1967). Tidal theory with Newtonian cooling. *Pure & Appl. Geophys.*, **64**, 90-96.

16. (1967) Physical processes in the mesosphere. *Proc. IAMAP Moscow Meeting on Dynamics of Large Scale Atmospheric Processes*, A.S. Monin, ed.

17. (1967) Lunar diurnal atmospheric tide. *Nature*, **213**, 1260-1261.

18. (1967) Planetary waves on beta planes. *Mon. Wea. Rev.*, **95**, 441-451.

19. (1968) The application of classical atmospheric tidal theory. *Proc. Roy. Soc.*, **A**, **303**, 299-316.

20. (1968) Lower atmospheric energy sources for the upper atmosphere. *Met. Mono.*, **9**, 37-46.

21. (1968) Rossby waves with negative equivalent depths -- comments on a note by G.A. Corby. *Q.J. Roy. Met. Soc.*, **94**, 402-407.

22. R.S. Lindzen, E.S. Batten and J.W. Kim (1968). Oscillations in atmospheres with tops. *Mon. Wea. Rev.*, **96**, 133-140.

23. R.S. Lindzen and J.R. Holton (1968). A note on Kelvin waves in the atmosphere. *Mon. Wea. Rev.*, **96**, 385-386.

24. R.S. Lindzen and T. Matsuno (1968). On the nature of large scale wave disturbances in the equatorial lower stratosphere. *J. Met. Soc. Japan*, **46**, 215-221.

25. R.S. Lindzen and J.R. Holton (1968). A theory of quasi-biennial oscillation. *J. Atmos. Sci.*, **26**, 1095-1107.

26. (1968) Vertically propagating waves in an atmosphere with Newtonian cooling inversely proportional to density. *Can. J. Phys.*, **46**, 1835-1840.

27. (1968) Some speculations on the roles of critical level interactions between internal gravity waves and mean flows. In *Acoustic Gravity Waves in the Atmosphere*, T.M. Georges, ed. U.S. Government Printing Office.

28. (1969) Data necessary for the detection and description of tides and gravity waves in the upper atmosphere. *J. Atmos. Ter. Phys.*, **31**, 449-456.
29. R.S. Lindzen and S. Chapman (1969). Atmospheric tides. *Sp. Sci. Revs.*, **10**, 3-188.

30. R.S. Lindzen and H.L. Kuo (1969). A reliable method for the numerical integration of a large class of ordinary and partial differential equations. *Mon. Wea. Rev.*, **97**, 732-734.

31. (1969) Vertical momentum transport by large scale disturbances of the equatorial lower stratosphere. *J. Met. Soc. Japan.*, **48**, 81-83.

32. (1969) The latke, the hamantasch and the (m)oral crisis in the university. *The Jewish Digest*, **15**, 55-58.

33. S. Chapman and R.S. Lindzen (1970). *Atmospheric Tides*, D. Reidel Press, Dordrecht, Holland, 200 pp.

34. (1970) Internal equatorial planetary scale waves in shear flow. *J. Atmos. Sci.*, **27**, 394-407.

35. (1970) The application and applicability of terrestrial atmospheric tidal theory to Venus and Mars. *J. Atmos. Sci.*, **27**, 536-549.

36. (1970) Mean heating of the thermosphere by tides. *J. Geophys. Res.*, **75**, 6868-6871.

37. (l970) Internal gravity waves in atmospheres with realistic dissipation and temperature: Part I. Mathematical development and propagation of waves into the thermosphere. *Geophys. Fl. Dyn.*, **1**, 303-355.

38. R.S. Lindzen and D. Blake (1971). Internal gravity waves in atmospheres with realistic dissipation and temperature: Part II. Thermal tides excited below the mesopause. *Geophys. Fl. Dyn.*, **2**, 31-61.

39. (1971) Internal gravity waves in atmospheres with realistic dissipation and temperature: Part III. Daily variations in the thermosphere. *Geophys. Fl. Dyn.*, **2**, 89-121.

40. (197l) Tides and gravity waves in the upper atmosphere. In *Mesospheric Models and Related Experiments*, G. Fiocco, ed., D. Reidel Pub., Dordrecht, Holland.

41. (1971) Atmospheric Tides. *Lec. in App. Math.*, **14**, 293-362.

42. (1971) Some aspects of atmospheric waves in realistic atmosphere. In *Atmospheric Model Criteria*, R.E. Smith and S.T. Wu, eds., Marshall Space Flight Center, NASA Report SP-305, pp. 71-90.

43. (1971) Equatorial planetary waves in shear: Part I. *J. Atmos. Sci.*, **28**, 609-622.

44. (1972) Equatorial planetary waves in shear: Part II. *J. Atmos. Sci.*, **29**, 1452-1463.

45. (1972) Atmospheric tides. In *Structure and Dynamics of the Upper Atmosphere*, F. Verniani, ed., Elsevier, New York, pp. 21-88.

46. R.S. Lindzen and D. Blake (1972). Lamb waves in the presence of realistic distributions of temperature and dissipation. *J. Geophys. Res.*, 7, 2166-2176.

47. (1972) The 26 month oscillation in the atmosphere. In *Geopaedia Encyclopedic Dictionary of Geosciences*, Pergamon Press, New York.

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49. J.R. Holton and R.S. Lindzen (1972). An updated theory for the quasibiennial cycle of the tropical stratosphere. *J. Atmos. Sci.*, **29**, 1076-1080.

50. (1973) Wave-mean flow interaction in the upper atmosphere. *Bound. Lay. Met.*, **4**, 327-343.

51. (1973) Hydrodynamics of stratified fluids. *Bound. Lay. Met.*, **4**, 227-231.

52. D. Blake and R.S. Lindzen (1973). Effect of photochemical models on calculated equilibria and cooling rates in the stratosphere. *Mon. Wea. Rev.*, **101**, 738-802.

53. J.R. Holton and R.S. Lindzen (1973). Internal gravity wave-mean wind interaction. *Science*, **182**, 85-86.

54. R.S. Lindzen and S.S. Hong (1973). Equivalent gravity modes -- an interim evaluation. *Geophys. Fl. Dyn.*, **4**, 279-292.

55. R.S. Lindzen and D. Will (1973). An analytic formula for heating due to ozone absorption. *J. Atmos. Sci.*, **30**, 513-515.

56. (1974) Wave-CISK and tropical meteorology. *Proceedings Int'l. Trop. Met. Meeting, 1/31-2/7, Nairobi, Kenya.* Amer. Met. Soc. Pub.

57. (1974) Wave-CISK in the tropics. *J. Atmos. Sci.*, **31**, 156-179.

58. (1974) Wave-CISK and tropical spectra. *J. Atmos. Sci.*, **31**, 1447-1449.

59. (1974) Stability of a Helmholtz velocity profile in a continuously stratified infinite Boussinesq fluid - applications to a clear air turbulence. *J. Atmos. Sci.*, **31**, 1507-1514.

60. S. Fels and R.S. Lindzen (1974). Interaction of thermally excited gravity waves with mean flows. *Geophys. Fl. Dyn.*, **6**, 149-191.

61. R.S. Lindzen and S.S. Hong (1974). Effects of mean winds and horizonal temperature gradients on solar and lunar semidiurnal tides in the atmosphere. *J. Atmos. Sci.*, **31**, 1421-1446.

62. (1975) Reply to comments by A. Hollingsworth. *J. Atmos. Sci.*, **31**, 1643.

63. R.S. Lindzen and C.Y. Tsay (1975). Wave structure of tropical atmosphere over the Marshall Islands during 1 April - 1 July 1958. *J. Atmos. Sci.*, **32**, 2009-2021.

64. (1976) Reply to comments by M. Geller. *J. Atmos. Sci.*, **33**, 558.

65. (1976) A modal decomposition of the semidiurnal tide in the lower atmosphere. *J. Geophys. Res.*, **81**, 2923-2925.

66. R.S. Lindzen and S.S. Hong (1976). Solar semidiurnal tide in the thermosphere. *J. Atmos. Sci.*, **33**, 135-153.

67. R.S. Lindzen and A.J. Rosenthal (1976). On the instability of Helmholtz velocity profiles in stably stratified fluids when a lower boundary is present. *J. Geophys. Res.*, **81**, 1561-1571.

68. R.S. Lindzen and K.K. Tung (1976). Banded convective activity and ducted gravity waves. *Mon. Wea. Rev.*, **104**, 1602-1617.

69. E. Schneider and R.S. Lindzen (1976). A discussion of the parameterization of momentum exchange by cumulus convection. *J. Geophys. Res.*, **81**, 3158-3160.

70. E. Schneider and R.S. Lindzen (1976). On the influence of stable stratification on the thermally driven tropical boundary layer. *J. Atmos. Sci.*, **33**, 1301-1307.

71. J. Forbes and R.S. Lindzen (1976). Atmospheric solar tides and their electrodynamic effects. Part I: The global Sq current system. *J. Atmos. Ter. Phys.*, **38**, 897-910.

72. J. Forbes and R.S. Lindzen (1976). Atmospheric solar tides and their electrodynamic effects. Part II: The equatorial electrojet. *J. Atmos. Ter. Phys.*, **38**, 911-920.

73. J. Forbes and R.S. Lindzen (1977). Atmospheric solar tides and their electrodynamic effects. Part III: The polarization electric field. *J. Atmos. Ter. Phys.*, **38**, 1369-1377.

74. (1977) Some aspects of convection in meteorology. In *Problems of Stellar Convection*, J.P. Zahn, ed., Springer Verlag, New York, 128-141.

75. R.S. Lindzen and B. Farrell (1977). Some realistic modifications of simple climate models. *J. Atmos. Sci.*, **34**, 1487-1501.

76. R.S. Lindzen, J. Forbes and S.S. Hong (1977). *Semidiurnal Hough modes extensions and their application.* Naval Research Lab. Memorandum. Rep. 3442, 65 pp.

77. E. Schneider and R.S. Lindzen (1977). Axially symmetric steady state models of the basic state of instability and climate studies. Part I: Linearized calculations. *J. Atmos. Sci.*, **34**, 253-279.

78. D. Stevens, R.S. Lindzen and L. Shapiro (1977). A new model of tropical waves incorporating momentum mixing by cumulus convection. *Dyn. Atmos. and Oc.*, **1**, 365-425.

79. (1978) Effect of daily variations of cumulonimbus activity on the atmospheric semidiurnal tide. *Mon. Wea. Rev.*, **106**, 526-533.

80. (1979) Atmospheric Tides. *Ann. Rev. Earth & Plan. Sci.*, **7**, 199-225.

81. R.S. Lindzen and K.K. Tung (1978). Wave overreflection and shear instability. *J. Atmos. Sci.*, **35**, 1626-1632.

82. D. Stevens and R.S. Lindzen (1978). Tropical wave-CISK with a moisture budget and cumulus friction. *J. Atmos. Sci.*, **35**, 940-961.

83. D. Stevens and R.S. Lindzen (1978). Tropical wave-CISK with cumulus friction. *Proc. AMS Symp. on Trop. Met.*, Key Biscayne.

84. R.S. Lindzen and J.M. Forbes (l978). Boundary layers associated with thermal forced planetary waves. *J. Atmos. Sci.*, **35**, 1441-1449.

85. K.K. Tung and R.S. Lindzen (1979). Theory of stationary long waves. Part I. A simple theory of blocking. *Mon. Wea. Rev.*, **107**, 714-734.

86. K.K. Tung and R.S. Lindzen (1979). Theory of stationary long waves. Part II. Resonant Rossby waves in the presence of realistic vertical shear. *Mon. Wea. Rev.* **107**, 735-750.

87. (1979) On a calculation of the symmetric circulation and its implications for the role of eddies. *Proceedings of the NCAR General Circulation Colloquium, 1978.*

88. (1979) The concept of wave overreflection and its application to baroclinic instability. *Proceedings of the NCAR General Circulation Colloquium 1978.*

89. R.S. Lindzen, B. Farrell and K.K. Tung (1980). The concept of wave overreflection and its application to baroclinic instability. *J. Atmos. Sci.*, **37**, 44-63.

90. R.S. Lindzen and B. Farrell (1980). Reply. *J. Atmos. Sci.*, **37**, 900-902.

91. R.S. Lindzen and B. Farrell (1980). A simple approximate result for the maximum growth rate of baroclinic instabilities. *J. Atmos. Sci.*, **37**, 1648-1654.

92. R.S. Lindzen and B. Farrell (1980). The role of polar regions in global climate, and the parameterization of global heat transport. *Mon. Wea. Rev.*, **108**, 2064-2079.

93. (1980) Theory of atmospheric tides. *J. Meteor. Soc. Japan*, **58**, 273-278.

94. (1980) Wave-CISK and cumulus parameterization in perspective. *Proceedings of NAS Symposium on the Impact of GATE on Large-Scale Numerical Modeling of the Atmosphere and Ocean.* Woods Hole, MA.

95. E.K. Schneider and R.S. Lindzen (1980). Comments on cumulus friction: Estimated influence on the tropical mean meridional circulation. *J. Atmos. Sci.*, **37**, 2803-2806.

96. R.S. Lindzen and A.J. Rosenthal (1981). A WKB asymptotic analysis of baroclinic instability. *J. Atmos. Sci.*, **38**, 619-629.

97. (1981) Turbulence and stress due to gravity wave and tidal breakdown. *J. Geophys. Res.*, **86**, 9707-9714.

98. (1981) Some remarks on cumulus parameterization. *Proceedings of the NASA Clouds in Climate Conference*, NASA Report, available NASA/Goddard Institute of Space Studies.

99. R.S. Lindzen, A.Y. Hou and B.F. Farrell (1982). The role of convective model choice in calculating the climate impact of doubling CO_2. *J. Atmos. Sci.*, **39**, 1189-1205.

100. R.S. Lindzen, B.F. Farrell and D. Jacqmin (1982). Vacillations due to wave interference. *J. Atmos. Sci.*, **39**, 14-23.

101. R.S. Lindzen and M.R. Schoeberl (1982). A note on the limits of Rossby wave amplitudes. *J. Atmos. Sci.*, **39**, 1171-1174.

102. R.S. Lindzen, T. Aso and D. Jacqmin (1982). Linearized calculations of stationary waves in the atmosphere. *J. Met. Soc. Japan*, **60**, 66-78.

103. R.S. Lindzen and J. Forbes (1982). Turbulence originating from stable internal waves. *J. Geophys. Res.*, **88**, 6549-6553.

104. R.S. Lindzen, B. Farrell and A.J. Rosenthal (1982). Absolute barotropic instability and monsoon depressions. *J. Atmos. Sci.*, **40**, 1178-1184.

105. A. Rosenthal and R.S. Lindzen (1983). Instabilities in a stratified flud having one critical level. Part I: Results. *J. Atmos. Sci.*, **40**, 509-520.

106. A. Rosenthal and R.S. Lindzen (1983). Instabilities in a stratified fluid having one critical level. Part II: Explanation of gravity wave instabilities as overreflected waves. *J. Atmos. Sci.*, **40**, 521-529.

107. A. Rosenthal and R.S. Lindzen (1983). Instabilities in a stratified fluid having one critical level. Part III: Kelvin-Helmholtz instabilities as overreflected waves. *J. Atmos. Sci.*, **40**, 530-542.

108. A. Rosenthal and R.S. Lindzen (1983). *Instabilities in a stratified shear flow in the absence of Kelvin-Helmholtz instabilities*. Tech. Rept., Center for Met. and Phys. Oceanogr., MIT.

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114. M. Schoeberl and R.S. Lindzen (1984). A numerical simulation of barotropic instability including wave-mean flow interaction. *J. Atmos. Sci.*, **41**, 1368-1379.

115. R.S. Lindzen and J. Barker (1985). Instability and wave over-reflection in stably stratified shear flow. *J. Fluid Mech.*, **151**, 189-217.

116. D. Jacqmin and R.S. Lindzen (1985). The causation and sensitivity of the northern winter planetary waves. *J. Atmos. Sci.*, **42**, 724-745.

117. (1985) Multiple gravity wave breaking levels. *J. Atmos. Sci.*, **42**, 301-305.

118. (1986) Stationary planetary waves, blocking, and interannual variability. *Adv. Geophys.*, **29**, 251-273.

119. (1986). A simple model for 100 thousand years oscillations in glaciation. *J. Atmos. Sci.*, **43**, 986-996.

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121. P. Ioannou and R.S. Lindzen (1986). Baroclinic instability in the presence of barotropic jets. *J. Atmos. Sci.*, **43**, 2999-3014.

122. R.S. Lindzen and S. Nigam (1987). On the role of sea surface temperature gradients in forcing low level winds and convergence in the tropics. *J. Atmos. Sci.*, **44**, 2418-2436.

123. D.M. Straus, R.S. Lindzen and A.M. da Silva (1987). The characteristic Rossby frequency. *J. Atmos. Sci.*, **44**, 1100-1105.

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126. A.M. da Silva and R.S. Lindzen (1988). A mechanism for the excitation of ultralong Rossby waves, *J. Atmos. Sci.*, **44**, 3625-3639.

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128. (1988) Instability of plane parallel shear flow (Towards a mechanistic picture of how it works). *PAGEOPH*, **16**, 103-121.

129. (1988) Some remarks on cumulus parameterization. *PAGEOPH*, **16**, 123-135.

130. (1988) Supersaturation of vertically propagating internal gravity waves. *J. Atmos. Sci.*, **45**, 705-711.

131. R.S. Lindzen and A.Y. Hou (1988). Hadley circulations for zonally averaged heating centered off the equator. *J. Atmos. Sci.*, **45**, 2416-2427.

132. R.S. Lindzen and K.-K.- Tung (1988). Comments on 'On the shear instability without over-reflection' by Masaaki Takahashi. *J. Met. Soc. Japan*, **66**, 179-184.

133. R. Miller and R.S. Lindzen (1988). Viscous destabilization of stratified shear flow for Ri>1/4. *Geophys. Astrophys. Fl. Dyn.*, **42**, 49-91.

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135. S. Nigam and R.S. Lindzen (1989). The Sensitivity of stationary waves to variations in the basic state zonal flow. *J. Atmos. Sci.*, **46**, 1746-1768.

136. R.S. Lindzen and M. Fox-Rabinovitz (1989). Consistent horizontal and vertical resolution. *Mon. Wea. Rev.*, **117**, 2575-2583.

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142. (1990) *Dynamics in Atmospheric Physics*, Cambridge University Press, New York, 310pp.

143. (edited with G.W. Platzman and E.N. Lorenz) (1990) *The Atmosphere - A Challenge A memorial to Jule Charney*, Historical Monograph Series of the Am. Meteor. Soc.

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145. C. Snyder and R.S. Lindzen (1991). Quasi-geostrophic wave-CISK in an unbounded baroclinic shear. *J. Atmos. Sci.*, **48**, 78-88.

146. (with Volkmar Wirth) (1991) Zero potential vorticity gradient basic states in the neighborhood of the equator. in *Proceedings of the Fourteenth Annual Climate Diagnostics Workshop*. NTIS, US Dept. of Commerce, Springfield, VA pp 256-259.

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